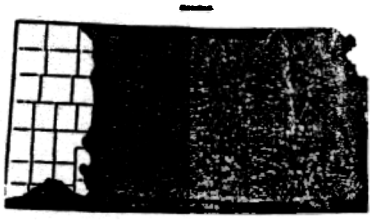
LOAMY LOWLAND

KANSAS RANGE SITE DESCRIPTION

1. Location of Site:



Land Resource Area 72
Central High Table Land

2. Climate:

See climate for LRA 72
(Filed in the front of Section II-E)

3. Topography:

This site occurs on nearly level to gently sloping alluvial lands that are subject to occasional or frequent flooding.

4. Soils and Hydrological Characteristics:

a. This site consists of deep alluvial soils which occur on the narrow flood plains of drainageways. They have loamy or silty calcareous surface layers and subsoils. Fertility is high and occasionally a few small areas are slightly to moderately affected by salt and alkali.

The available water capacity is high and permeability is moderate to moderately slow. Water tables may rise into the root zone during wet periods, but it is not the dominant factor controlling vegetative growth.

b. Some of the soils which characterize this site are:

Alluvial land	Humbarger
Bridgeport	Roxbury
Goshen	

c. Recurrent flooding, channeling, and deposition are a hazard

5. Climax Vegetation:

a. Mid and tall grasses dominate the herbaceous plant community. Big bluestem, little bluestem, switchgrass, indiangrass, western wheatgrass, and sideoats grama are the major forage plants on this site. Combined they can make up 80 percent of the total vegetative composition. Eastern gamagrass may make up to 10 percent of the vegetation on the more favorable portions of the site. Canada wildrye, tall dropseed, and sedges are also common on the site but occur less frequently and usually in small amounts. Important palatable forbs are maximilian sunflower, ashy sunflower, catclaw sensitivebriar, prairieclovers, and Illinois bundleflower.

b. Guidelines For Determining Range Condition:

(Percentage of total production by weight)

Grasses and Grasslike - 85 Percent			Forbs - 10 Percent		Shrubs and Cacti - 5 Percent	
	45	big bluestem		American licorice		American plum
	10	eastern gamagrass		ashy sunflower		buckbrush
60	15	indiangrass		blacksamson	5	indigobush amorpha
	5	little bluestem		catclaw sensitivebriar		leadplant
	10	switchgrass		dalea sp.		prairie rose
				dotted gayfeather		
	5	blue grama		Illinois bundleflower		
	5	buffalograss	5	lespedeza sp.		
	5	prairie cordgrass		maximilian sunflower		
	5	sedges		milkvetch sp.		
25	10	sideoats grama		pitcher sage		
	5	tall dropseed		purple prairieclover		
	5	vinemesquite		slimflower scurfpea		
	10	western wheatgrass		willowleaf sunflower		
T		perennial threeawns		baldwin ironweed		
				heath aster		
				hymenopappus		
				Louisiana sagewort		
				scarlet globemallow		
			5	stiff goldenrod		
				upright prairieconeflower		
				western ragweed		
				western yarrow		
				woolly verbena		
				yellowspine thistle		

c. Invaders common to this site include annual sunflower, cocklebur, curled dock, giant ragweed, Pennsylvania smartweed, russianthistle, and western salsify.

6. Management Implications:

This site is generally on the flood plain of major streams and occasionally along feeder streams where flooding is frequent. Much of this site exists as narrow bands isolated along streams with cropland on both sides. Other areas are bands along drainageways with terrace and upland sites on either side. Extra moisture from overflows results in healthy, deeper rooted plants that make this site a preferred grazing area, especially during dry periods.

A few areas of this site have woody vegetation which has become established during the past 60 to 80 years. The suppression of fire has permitted such trees as cottonwood, hackberry, and lesser amounts of ash and elm to establish on the more favorable portions of this site.

Overgrazing by cattle results in the reduction of preferred species such as big bluestem, eastern gamagrass, indiangrass, switchgrass, and Canada wildrye. Palatable forbs such as American licorice, catclaw sensitivebriar, Illinois bundleflower, and maximilian sunflower are also reduced. Less desirable species such as western wheatgrass, blue grama, buffalograss, perennial threeawns, tall dropseed, baldwin ironweed, western ragweed, and scarlet globemallow increase as the preferred species decrease.

When overgrazing persists for only a few years, the site can often be returned to near its potential with grazing management that includes proper use and scheduled rest periods during the growing season. If overgrazing has occurred over a longer period of time, as is common along the old Santa Fe Trail, recovery even with good management may be extremely slow. In this condition western wheatgrass usually becomes the dominant grass along with significant amounts of blue grama, tall dropseed, perennial threeawns, buffalograss, and sideoats grama.

7. Wildlife Considerations:

This site attracts most wildlife species found in the area. This is especially true where sufficient amounts of woody species have become established on or near the site. These woody species provide roosts, nesting cover, and escape cover for many species of wildlife.

Management of this site to maintain diverse vegetation including trees and shrubs can provide excellent wildlife habitat. Some of the best known species common to this site are deer, pheasant, turkey, quail, songbirds, cottontail rabbits, raccoons, and opossums. Many of these species move into the site as woody cover develops.

8. Other Uses and Values:

Other uses of this site are quite limited because of frequent flooding. However, some of this site is used for cropland. Other areas are used for limited picnic and recreation use.

9. Herbage Production Guidelines:

The following guidelines are based on available clipping data when this site is in excellent condition. Vigor of principal forage species, time of burning, if fire is used, as well as growing conditions, influence annual herbage production.

	Total Air Dry Herbage	
Growing Conditions	Pounds/Acre	Kilograms/Hectare
Favorable	4,000-5,000	4,500-5,600
Normal	3,000-4,000	3,350-4,500
Unfavorable	2,000-3,000	2,250-3,350

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's per Hectare
Excellent	76-100	14-16	.8	5.5-6.5	2.0
Good	51-75	16-18	.7	6.5-7.3	1.7
Fair	26-50	18-25	.6	7.3-10.0	1.5
Poor	0-25	25+	.4	10+	1.0

These guidelines are considered safe initial stocking rates from which a sound management program can be built. Grazing only during the dormant season or use of a specialized grazing program will usually allow a substantial increase in the stocking rates shown.

This site is not normally used for hay production.

11. Relative Preference of Plant Species:

Preferences of plant species by classes of livestock and uses by wildlife will vary from year to year and season to season. The table below is what might be expected under average climatic conditions and good management.

Forage Preferences

H = High
M = Medium
L = Low

Wildlife Preferred Uses

C = Cover
F = Food
N = Nesting

Plant Species	Animal Species			
	Cattle	Sheep	Deer	Pheasant
American licorice	H	H	F	F
big bluestem	H	H	C	C,N
blue grama	H	H	---	---
buckbrush	L	M	C	C,F
buffalograss	H	H	---	---
catclaw sensitivebriar	H	H	F	F
dotted gayfeather	M	M	F	---
eastern gamagrass	H	H	C	C,N
Illinois bundleflower	H	H	F	C,F
indiangrass	H	H	C	C,N
leadplant	H	H	F	C,F
maximilian sunflower	H	H	F	C,F
prairie cordgrass	M 1/	L	C	C,N
prairie rose	M	L	C,F	C,F
sideoats grama	H	H	---	C
switchgrass	H 2/	L	C	C,N
western ragweed	H	M	---	F
western wheatgrass	H 1/	M 1/	F	C,N

1/ Has a high preference during lush growth periods.

2/ Preferred during first half of growing season.

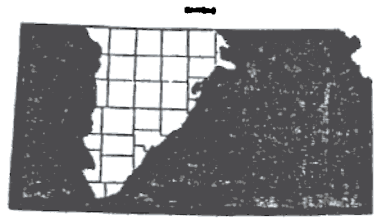
Reference:

Anderson, Kling L. and Clenton E. Owensby. 1969 Common Names of a Selected List of Plants. Kansas State University Tech. Bul. 117.

LOAMY LOWLAND

KANSAS RANGE SITE DESCRIPTION

1. Location of Site:



Land Resource Area 73
Rolling Plains and Breaks

2. Climate:

See climate for LRA 73
(Filed in the front of Section II-E)

3. Topography:

This site occurs on nearly level to gently sloping alluvial lands that are subject to flooding.

4 Soils and Hydrological Characteristics:

a. This site consists of deep alluvial soils which occur on the narrow flood plains of drainageways. They have loamy or silty surface layers and subsoils. Water tables may rise into the root zone during wet periods, but it is not the dominant factor controlling vegetative growth. Available water capacity is high. Internal drainage is medium and fertility is high.

b. The major soils that characterize this site are:

Alluvial land	McCook
Bridgeport	Roxbury
Hobbs	Tobin

c. Recurrent flooding, channeling, and deposition are a hazard.

5. Climax Vegetation:

a. Tall and mid grasses dominate the herbaceous plant community. Big bluestem, little bluestem, switchgrass, and indiangrass are the major forage plants on this site making up about 70 percent of the vegetation. Eastern gamagrass may make up 10 to 15 percent of the vegetation on the more favored portions of the site.

Canada wildrye, tall dropseed, and sedges are common to the site but occur in small amounts. Important forbs are catclaw sensitivebriar, heath aster, Illinois bundleflower, and wild licorice.

Trees such as plains cottonwood, green ash, hackberry, and bur oak have become naturalized on this site since man has suppressed fire over the past 60 to 80 years. These trees may eventually be a larger portion of the plant potential than is currently recognized.

b. Guidelines for Determining Range Condition:

Percentage of tota production by weight)

Grasses and Grasslike - 85 Percent			Forbs - 10 Percent		Trees, Shrubs, and Cacti - 5 Percent	
	45	big bluestem		American licorice		American plum
	10	eastern gamagrass		ashy sunflower		buckbrush
70	15	indiangrass		blacksamson		green ash
	5	little bluestem		catclaw sensitivebriar	5	hackberry
	15	switchgrass		dalea sp.		indigobush amorpha
				dotted gayfeather		leadplant
	5	blue grama	5	Illinois bundleflower		plains cottonwood
	5	prairie cordgrass		maximilian sunflower		prairie rose
15	5	sedges		milkvetch sp.		
	5	sideoats grama		pitcher sage	T	bur oak
	5	tall dropseed		purple prairieclover		
	10	western wheatgrass		slimflower scurfpea		
				willowleaf sunflower		
T		perennial threeawn				
				baldwin ironweed		
				heath aster		
				hymenopappus		
				Louisiana sagewort		
				scarlet globemallow		
			5	stiff goldenrod		
				upright prairieconeflower		
				western ragweed		
				western yarrow		
				wild licorice		
				woolly verbena		
				yellowspine thistle		

c. Invaders common to this site are annual sunflower, cocklebur, curled dock, giant ragweed, Pennsylvania smartweed, russianthistle and western salsify.

6. Management Implications:

This site is on bottomlands that are commonly flooded. Many areas of this site are found as narrow bands adjacent to streams with cropland on both sides. Other areas of this range site are located along drainageways with terrace and upland sites on either side. Extra moisture from overflows results in healthy, deeper rooted plants that make this site a preferred grazing area, especially during dry periods.

Overgrazing by cattle results in the reduction of preferred species such as big bluestem, eastern gamagrass, indiangrass, switchgrass, and Canada wildrye. Palatable forbs such as American licorice, catclaw sensitivebriar, Illinois bundleflower, and maximilian sunflower are also reduced. Less desirable species such as western wheatgrass, blue grama, perennial threeawns, tall dropseed, baldwin ironweed, western ragweed, and scarlet globemallow increase as the preferred species decrease.

When overgrazing persists for only a few years, the site can often be returned to near its potential with grazing management that includes proper use and scheduled periodic rest periods during the growing season. If overgrazing has occurred over a longer period of time, recovery even with good management is slow. In this condition western wheatgrass usually becomes the dominant grass along with significant amounts of blue grama, tall dropseed, perennial threeawns, buffalograss, and sideoats grama.

7. Wildlife Considerations:

This site attracts most wildlife species found in the area. This is especially true where sufficient amounts of woody species have become established on or near the site. Trees and shrubs provide nesting, roosting, and escape cover for many species of wildlife.

Management to maintain diverse vegetation on this site including trees and shrubs can provide excellent wildlife habitat. Some of the best known species common to this site are deer, turkey, quail, songbirds, cottontail rabbits, raccoons, and opossums. Many of these species migrate to this site as woody cover develops.

8. Other Uses and Values

This is not a good building site because of flooding. Much of this site is used for cropland.

9. Herbage Production Guidelines:

The following guidelines are based on available clipping data when this site is in excellent condition. Vigor of principal forage species, time of burning, if fire is used, as well as growing conditions, influence annual herbage production.

	Total Air Dry Herbage	
Growing Conditions	Pounds/Acre	Kilograms/Hectare
Favorable	5,000-6,000	5,600-6,720
Normal	4,000-5,000	4,480-5,600
Unfavorable	3,000-4,000	3,360-4,480

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's per Hectare
Excellent	76-100	10-14	1.0	4-6	2.5
Good	51-75	14-18	.8	6-7	2.0
Fair	26-50	18-25	.6	7-10	1.5
Poor	0-25	25+	.4	10+	1.0

These guidelines are considered safe initial stocking rates from which a sound management program can be built. Grazing only during the dormant season or use of a specialized grazing program will usually allow a substantial increase in the stocking rates shown.

When maintained in good to excellent condition, an average hay yield of about 1.25 tons per acre can be expected from this site.

11. Relative Preference of Plant Species:

Preferences of plant species by classes of livestock and uses by wildlife will vary from year to year and season to season. The table below is what might be expected under average climatic conditions and good management.

Forage Preferences

H = High
M = Medium
L = Low

Wildlife Preferred Uses

C = Cover
F = Food
N = Nesting

Plant Species	Animal Species			
	Cattle	Sheep	Deer	Pheasant
American licorice	H	H	F	F
big bluestem	H	H	C	C,N
blue grama	H	H	F	--
buckbrush	L	M	C	C,F
catclaw sensitivebriar	H	H	F	F
dotted gayfeather	M	M	--	--
eastern gamagrass	H	H	C,F	C,N
heath aster	M	H	F	C
Illinois bundleflower	H	H	F	C,F
indiangrass	H	H	C	C,N
leadplant	H	H	F	C,F
maximilian sunflower	H	H	F	C,F
prairie cordgrass	M 1/	L	C	C,N
prairie rose	M	L	C,F	C,F
sideoats grama	H	H	--	C,N
switchgrass	H 2/	L	C	C,F,N
western ragweed	H	M	--	F
western wheatgrass	H 1/	M 1/	F	C,N

1/ Has a high preference during lush growth periods.

2/ Preferred during first half of growing season.

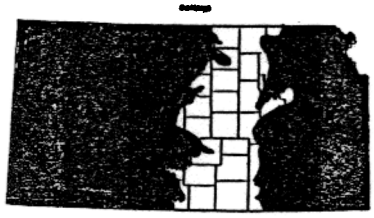
Reference:

Anderson, Kling L. and Clenton E. Owensby. 1969 Common Names of a Selected List of Plants. Kansas State University Tech. Bul. 117.

LOAMY LOWLAND

KANSAS RANGE SITE DESCRIPTION

1 Location of Site:



Land Resource Areas 74, 75, and 80A
Central Kansas Sandstone Hills,
Central Loess Plains, and
Central Rolling Red Prairies

2. Climate:

See climate for LRA's 74, 75, and 80A
(Filed in the front of Section II-E)

3. Topography:

This site occurs on nearly level alluvial lands that are subject to frequent or occasional flooding.

4. Soils and Hydrological Characteristics:

a. The soils on this site are alluvial soils which occur on the flood plains of drainageways. These deep soils have loamy to silty surfaces and subsoils. Water tables may rise into the root zone during wet periods, but it is not the dominant factor controlling vegetative growth. These soils are moderately well drained or well drained. Available water capacity is high. Permeability is moderate or moderately slow.

b. The major soils that characterize this site are:

Bridgeport	Humbarger
Elandco	Kaski
Eudora	McCook
Hobbs	Roxbury

All soils on this site are occasionally or frequently flooded For rarely flooded soils, see the Loamy Terrace Range Site Description.

c. Recurrent flooding and deposition are a hazard.

5 Climax Vegetation:

a. Tall grasses dominate the herbaceous plant community. Big bluestem, eastern gamagrass, indiangrass, switchgrass, and prairie cordgrass are the major forage plants on this site making up about 70 to 75 percent of the vegetation. Eastern gamagrass may make up a major portion of the vegetation on isolated portions of this site that receive additional seasonal water.

Canada wildrye, tall dropseed, and sedges are common to the site but occur in small amounts. Important forbs are catclaw sensitivebriar, heath aster, Illinois bundleflower, American licorice, and maximilian sunflower.

Trees such as cottonwood, green ash, hackberry, and bur oak have naturalized on this site since man has suppressed wildfires. These trees will eventually be a larger portion of the plant community than is currently recognized providing there is a continued lack of natural or planned control.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

Grasses and Grasslike - 85 Percent			Forbs - 10 Percent		Trees and Shrubs - 5 Percent	
75	40	big bluestem	5	American licorice	5	American elm
	15	eastern gamagrass		ashy sunflower		American plum
	15	indiangrass		blacksamson echinacea		boxelder
	5	little bluestem		catclaw sensitivebriar		buckbrush
	10	prairie cordgrass		compassplant		bur oak
	15	switchgrass		dalea spp.		cottonwood
10	5	sedges		dotted gayfeather		green ash
	5	sideoats grama		Illinois bundleflower		hackberry
	5	tall dropseed		lespedeza spp.		indigobush amorpha
	5	western wheatgrass		manyflower scurfpea		
T		blue grama		maximilian sunflower		
		Canada wildrye		milkvetch spp.		
		perennial threeawns		pitcher sage		
		rosette panicums		purple prairieclover		
		Virginia wildrye		slimflower scurfpea		
			5	baldwin ironweed		
				heath aster		
				hymenopappus		
				Louisiana sagewort		
				scarlet globemallow		
				stiff goldenrod		
				upright prairieconeflower		
				western ragweed		
				woolly verbena		
				yarrow		
				yellowspine thistle		

c. Invaders common to this site are annual sunflower, cocklebur, curled dock, giant ragweed, Pennsylvania smartweed, russianthistle and western salsify.

6. Management Implications:

Many areas of this site are found as narrow bands adjacent to streams and are now cropland. Other areas of this range site are located along drainageways with terrace and upland sites on either side. Extra moisture and deeper rooted plants normally found on this site along with the level terrain make this a preferred grazing area for livestock, especially during plant stress periods. The wooded areas are often overused by livestock seeking winter shelter and summer shade.

Overgrazing by cattle results in the reduction of big bluestem, eastern gamagrass, indiangrass, and switchgrass. Palatable forbs such as American licorice, catclaw sensitivebriar, Illinois bundleflower, and maximilian sunflower are also reduced. Western wheatgrass, blue grama, perennial threeawns, tall dropseed, baldwin ironweed, western ragweed, and scarlet globemallow are the principal increasers.

When overgrazing persists for only a few years, the site can often be returned to near its potential with grazing management that includes proper use and scheduled rest periods during the growing season. If overgrazing has occurred over a long period of time, recovery may be slow. In this condition western wheatgrass usually becomes the dominant grass along with significant amounts of blue grama, tall dropseed, perennial threeawns, buffalograss, sideoats grama, annual bromes, and weedy forbs.

7. Wildlife Considerations:

Wildlife are attracted to this area especially where significant amounts of woody species have become established on or near the site. Trees and shrubs provide food and nesting, roosting, and escape cover for many species of wildlife. This "edge" between woodland and grassland or cropland is the preferred site for many species.

Management to maintain the diverse herbaceous vegetation found on this site along with some trees and shrubs can provide excellent wildlife habitat. The best known species that are common to this site are deer, turkey, quail, pheasant, songbirds, cottontail rabbits, raccoons, and opossums. Many of these species migrate to this site as woody cover develops.

8. Other Uses and Values:

This is not a good building site because of flooding. Much of this site is used for cropland.

9. Herbage Production Guidelines:

The following guidelines are based on available clipping data when this site is in excellent condition. Vigor of principal forage species, proper burning techniques, if used, as well as growing conditions, influence annual herbage production.

Growing Conditions	Total Air Dry Herbage Pounds/Acre	Total Air Dry Herbage Kilograms/Hectare
Favorable	6,000-8,000	6,720-8,960
Normal	5,000-6,000	5,600-6,720
Unfavorable	4,000-5,000	4,480-5,600

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's per Hectare
Excellent	76-100	6-8	1.7	2.5-3	4.2
Good	51-75	8-10	1.3	3-4	3.5
Fair	26-50	10-16	.9	4-6	2.5
Poor	0-25	16+	.6	6+	1.5

These guidelines are considered safe initial stocking rates from which a sound management program can be built. Grazing only during the dormant season or use of a specialized grazing program will usually allow a substantial increase in the stocking rates shown.

When maintained in good to excellent condition, an average hay yield of 1.5 to 1.75 tons per acre can be expected from this site.

11. Relative Preference of Plant Species:

Preferences of plant species by classes of livestock and uses by wildlife will vary from year to year and season to season. The table below is what might be expected under average climatic conditions and good management.

Forage Preferences

H = High
M = Medium
L = Low

Wildlife Preferred Uses

C = Cover
F = Food
N = Nesting

Plant Species	Animal Species			
	Cattle	Sheep	Deer	Pheasant
American licorice	H	H	F	F
American plum	L	L	C,F	C,F
big bluestem	H	H	C	C,N
buckbrush	L	M	C	C,F
Canada wildrye	H	M	F	C
catclaw sensitivebriar	H	H	F	F
dotted gayfeather	M	M	F	---
eastern gamagrass	H	H	C,F	C,F,N
heath aster	M	H	F	C
Illinois bundleflower	H	H	F	C,F
indiangrass	H	H	C	C,N
little bluestem	H	H	F	C
maximilian sunflower	H	H	C	C,F
prairie cordgrass	M 1/	L	C	C,N
sideoats grama	H	H	---	C
switchgrass	H 2/	L	C	C,F,N
western ragweed	H	M	F	C,F
western wheatgrass	H	M 1/	F	C,N

1/ Has a high preference during lush growth periods

2/ Preferred during first half of growing season.

Reference:

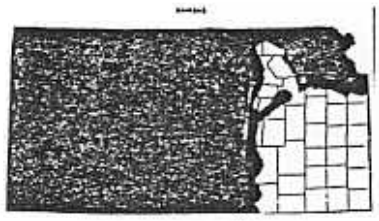
Anderson, Kling L. and Clenton E. Owensby. 1969 Common Names of a Selected List of Plants. Kansas State University Tech. Bul. 117.

LOAMY LOWLAND

KANSAS RANGE SITE DESCRIPTION

1. Location of Site:

Land Resource Areas 76, 84A, and 112
Bluestem Hills (Flint Hills), Cross Timbers,
and Cherokee Prairie



2. Climate:

See climate for LRA's 76, 84A, and 112
(Filed in the front of Section II-E)

3. Topography:

Nearly level lowlands that receive additional water from flooding and run-in from adjacent slopes.

4. Soils and Hydrological Characteristics:

a. These are deep, permeable soils having a loamy or silty surface with silty or clayey subsoil. These soils have high water-holding capacities and readily absorb water. Generally, these soils are high in fertility and organic matter content. Internal drainage is good, and an excellent water relationship to vegetation is present.

b. The major soils that characterize this site are

Brewer	Humbarger
Chase	Mason
Hepler	Verdigris

c. Flooding is the major hazard on this site.

5. Climax Vegetation:

a. This range site is potentially a tall grass prairie. These areas are probably the ones referred to by pioneers who talked about grass tall enough to wrap around the saddle horn. Big bluestem, indiangrass, eastern gamagrass, prairie cordgrass, and switchgrass dominate this site. Scattered hardwood trees and occasional clumps of trees often present a savannah effect. A fire induced climax prevented this site from being a hardwood forest.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

Grasses and Grasslike - 85 Percent			Forbs - 10 Percent		Shrubs and Trees 5 Percent
	45	big bluestem		American licorice	black walnut
65	20	eastern gamagrass		compassplant	buckbrush
	15	indiangrass		cup rosinweed	burr oak
				Illinois bundleflower	5 elderberry
15	10	prairie cordgrass	10	Jerusalemartichoke	hackberry
	10	switchgrass		maximilian sunflower	indigobush
				sawtooth sunflower	
		Canada wildrye		wholeleaf rosinweed	
		Florida paspalum			
5		green muhly		Atlantic wildindigo	
		knotroot bristlegrass		baldwin ironweed	
		prairie junegrass		butterfly milkweed	
		sedges		dogbane	
		tall dropseed		Louisiana sagewort	
		Virginia wildrye	T	narrowleaf four-o'clock	
				prairie phlox	
				tall gayfeather	
				thickspike gayfeather	
				western ragweed	
				white crownbeard	
				wingstem	

c. Common invaders to this site include barnyardgrass, common ragweed, giant foxtail, giant ragweed, Japanese brome, Kentucky bluegrass, lanceleaf ragweed, osageorange, prairie threeawn, red cedar, silver bluestem, and sumpweed.

6. Management Implications:

This site appears on stream terraces and along stream channels. Much of this site and adjacent sites are cultivated, leaving narrow, sometimes isolated strips of grass along the streams. The general size and location of the remaining grassland of the site lends itself to being managed as odd areas. This often results in the elimination of fire resulting in the site becoming dominated by tree species.

High preference forage species such as eastern gamagrass, Illinois bundleflower, and the rosinweeds are difficult to maintain on this site. With a combination of fire and intensive grazing management, these species may regain their position in the plant community.

Overgrazing with cattle results in the reduction of big bluestem, indiangrass, compassplant, and other preferred species. Switchgrass is reduced by overgrazing in the first half of the growing season. It responds as an increaser when overgrazing occurs during the last half of the growing season. Tall dropseed, buckbrush, baldwin ironweed, and western ragweed tend to increase with overgrazing.

Continued heavy use results in tall dropseed, western ragweed, undesirable woody species, and many less palatable plants becoming the dominant vegetation. Unless destructive grazing occurs, remnants of the major grass species tend to survive in a very reduced condition.

Overgrazing with sheep results in the elimination of most forb species. The major grass species decline more slowly but will also be eliminated if overgrazing is continued. Tall dropseed, Japanese brome, sumpweed, and prairie threeawn are the major species left under these conditions.

This site is frequently used for winter grazing. A complete growing season rest will allow the taller species to recover from excessive winter use and provide additional protection especially when used for calving.

For season long or yearlong grazing, proper stocking and timely rest are essential to restore and maintain the potential vegetation. Planned grazing systems are very effective but must be well planned and managed to optimize forage and livestock production. Grazing and rest should be timed to permit proper maintenance of the preferred plants and utilization of the forage before it becomes overly mature.

7. Wildlife Considerations:

When maintained in good to excellent condition, this site provides habitat for numerous wildlife species. The combination of tall grasses, forbs, trees, and the normally associated cropland provides food, nesting, and loafing cover as well as roost and escape cover for deer, turkey, quail, numerous songbirds, and small mammals.

Where excess litter buildup or dense underbrush occurs on this site, a properly timed spring burn can make the site more desirable for young birds and small mammals.

To maximize wildlife production, this site should be managed to maintain tall grasses and forbs. Maintaining shrubs and trees to provide escape cover and roosting habitat will further enhance potential wildlife numbers on this site.

8. Other Uses and Values:

The deep loamy soils of this site combined with the availability of water give this site the ability to produce significant amounts of hardwood timber. To maximize the multiple use benefit of this site, selective thinning or timber stand improvement must be planned and accomplished.

Outdoor recreation activities are common on this site due to the ability of the site to produce large shade trees. The hazard of flooding does limit many forms of recreational development. To optimize the recreation use, ungrazed areas used heavily by people must be frequently mowed or reduced to shorter understory vegetation

9 Herbage Production Guidelines:

The following guidelines are based on available clipping data when this site is in excellent condition. Vigor of principal forage species, time of burning, if fire is used, as well as growing conditions, influence annual herbage production.

	Total Air Dry Herbage	
Growing Conditions	Pounds/Acre	Kilograms/Hectare
Favorable	8,000-10,000	9,000-11,000
Normal	6,000-8,000	6,700-9,000
Unfavorable	5,000-6,000	5,600-6,700

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's Per Hectare
Excellent	76-100	5-6	2.4	2-2.4	6.0
Good	51-75	6-8	1.8	2.4-3.2	4.4
Fair	26-50	8-12	1.2	3.2-4.9	3.0
Poor	0-25	12+	0.7	4.9+	1.7

These guidelines are considered safe initial stocking rates from which a sound management program can be built. Grazing only during the dormant season or use of a specialized grazing program will usually allow a substantial increase in the stocking rates shown.

When maintained in good to excellent condition, an average hay yield of 1.75 to 2.25 tons per acre can be expected from this site

11. Relative Preference of Plant Species:

Preferences of plant species by classes of livestock and uses by wildlife will vary from year to year and season to season. The table below is what might be expected under average climatic conditions and good management.

Forage Preferences

H = High
M = Medium
L = Low

Wildlife Preferred Uses

C = Cover
F = Food
N = Nesting

Plant Species	Animal Species			
	Cattle	Sheep	Deer	Turkey
American licorice	H	H	F	F
baldwin ironweed	L	M/L	---	---
big bluestem	H	M	C	C,N
buckbrush	L	M	C,F	C
bur oak	L	L	C,F	C,F
compassplant	H	H	F	F
cup rosinweed	H	H	F	F
eastern gamagrass	H	H	C,F	C,N
hackberry	L	M	C,F	C,F
Illinois bundleflower	H	H	F	F
indiangrass	H	M	C	C,N
knotroot bristlegrass	M	M	---	F
maximilian sunflower	H	H	C,F	C,F
prairie cordgrass	M	L	C	C,N
switchgrass	H 2/	M	C	C,N
tall dropseed	M	L	C	C,N
western ragweed	M	M	---	F
wholeleaf rosinweed	H	H	F	F

1/ Has a high preference during lush growth periods.

2/ Preferred during first half of growing season.

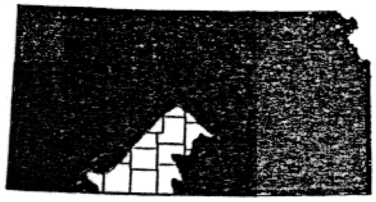
Reference:

Anderson, Kling L. and Clenton E. Owensby. 1969 Common Names of a Selected List of Plants. Kansas State University Tech. Bul. 117.

LOAMY LOWLAND

KANSAS RANGE SITE DESCRIPTION

1. Location of Site:



Land Resource Areas 78 and 79
Central Rolling Red Plains and
Great Bend Sand Plains

2. Climate:

See climate for LRA's 78 and 79
(Filed in the front of Section II-E)

3. Topography:

This site occurs on nearly level or gently sloping alluvial ands that are subject to flooding.

4. Soils and Hydrological Characteristics:

a. This site consists of deep alluvial soils which occur on the narrow flood plains of drainageways. They have loamy or silty surface layers and subsoils. Water tables may rise into the root zone during wet periods, but it is not the dominant factor controlling vegetative growth. Available water capacity is high. Internal drainage is medium and fertility is high.

b. The major soils that characterize this site are:

Alluvial land	Kaw
Clairmont	Tobin
Kaski	

All soils on this site are occasionally or frequently flooded. For rarely flooded soils, see the Loamy Terrace Range Site Description.

c. Recurrent flooding, channeling, and deposition are a hazard.

5. Climax Vegetation:

a. Tall and mid grasses dominate the herbaceous plant community. Big bluestem, little bluestem, switchgrass, and indiangrass are the major forage plants on this site making up about 70 percent of the vegetation. Eastern gamagrass may make up in excess of 15 percent of the vegetation on the more favored portions of the site.

Canada wildrye, tall dropseed, and sedges are common to the site but occur in small amounts. Important forbs are catclaw sensitive-briar, heath aster, Illinois bundleflower, maximilian sunflower, and American licorice.

Trees such as plains cottonwood, green ash, hackberry, and redcedar have become naturalized on this site since man has suppressed fire over the past 60 to 80 years. These trees may eventually be a larger portion of the plant community than is currently recognized.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

Grasses and Grasslike - 85 Percent			Forbs - 10 Percent			Trees and Shrubs - 5 Percent	
	45	big bluestem		American licorice			American plum
	10	eastern gamagrass		ashy sunflower			buckbrush
70	15	indiangrass		blacksamson echinacea			green ash
	5	little bluestem		catclaw sensitivebriar		5	hackberry
	10	switchgrass		compassplant			indigobush amorpha
				dalea spp.			leadplant
	5	blue grama		dotted gayfeather			plains cottonwood
	5	Canada wildrye	5	Illinois bundleflower			prairie rose
15	5	sedges		maximilian sunflower			
	5	sideoats grama		milkvetch spp.		T	redcedar
	5	tall dropseed		pitcher sage			
	5	vinemesquite		purple prairieclover			
	10	western wheatgrass		slimflower scurfpea			
T		perennial threeawns		baldwin ironweed			
		prairie cordgrass		heath aster			
				hymenopappus			
				Louisiana sagewort			
				scarlet globemallow			
			5	stiff goldenrod			
				upright prairieconeflower			
				western ragweed			
				woolly verbena			
				yarrow			
				yellowspine thistle			

c. Invaders common to this site are annual sunflower, cocklebur curled dock, giant ragweed, Pennsylvania smartweed, silver bluestem, russianthistle, and western salsify.

6. Management Implications:

Many areas of this site are found as narrow bands adjacent to streams with cropland on both sides. Other areas of this range site are located along drainageways with terrace and upland sites on either side. Extra moisture from overflows results in healthy, deeper rooted plants that make this site a preferred grazing area, especially during dry periods.

Overgrazing by cattle results in the reduction of preferred species such as big bluestem, eastern gamagrass, indiangrass, switchgrass, and Canada wildrye. Palatable forbs such as American licorice, catclaw sensitivebriar, Illinois bundleflower, and maximilian sunflower are also reduced. Less desirable species such as western wheatgrass, blue grama, perennial threeawns, tall dropseed, baldwin ironweed, western ragweed, and scarlet globemallow increase as the preferred species decrease.

When overgrazing persists for only a few years, the site can often be returned to near its potential with grazing management that includes proper use and scheduled periodic rest periods during the growing season. If overgrazing has occurred over a longer period of time, recovery even with good management is slow. In this condition western wheatgrass usually becomes the dominant grass along with significant amounts of blue grama, tall dropseed, perennial threeawns, buffalograss, sideoats grama, and silver bluestem.

The use of prescribed burning may be necessary to suppress undesirable woodies which tend to increase rapidly on this site.

7 Wildlife Considerations:

This site attracts most wildlife species found in the area. This is especially true where sufficient amounts of woody species have become established on or near the site. Trees and shrubs provide nesting, roosting, and escape cover for many species of wildlife.

Management to maintain diverse vegetation on this site, including trees and shrubs, can provide excellent wildlife habitat. Some of the best known species common to this site are deer, turkey, quail, pheasant, songbirds, cottontail rabbits, raccoons, and opossums. Many of these species migrate to this site as woody cover develops.

8. Other Uses and Values:

This is not a good building site because of flooding. Much of this site is used for cropland.

9. Herbage Production Guidelines:

The following guidelines are based on available clipping data when this site is in excellent condition. Vigor of principal forage species, time of burning, if fire is used, as well as growing conditions influence annual herbage production.

Growing Conditions	Total Air Dry Herbage Pounds/Acre	Kilograms/Hectare
Favorable	5,500-6,500	6,160-7,280
Normal	4,000-5,500	4,480-6,160
Unfavorable	3,000-4,000	3,360-4,480

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's per Hectare
Excellent	76-100	8-10	1.3	3-4	3.2
Good	51-75	10-15	1.0	4-6	2.5
Fair	26-50	15-25	.7	6-10	1.7
Poor	0-25	25+	.4	10+	1.0

These guidelines are considered safe initial stocking rates from which a sound management program can be built. Grazing only during the dormant season or use of a specialized grazing program will usually allow a substantial increase in the stocking rates shown.

When maintained in good to excellent condition, an average hay yield of about 1.25 tons per acre can be expected from this site.

11. Relative Preference of Plant Species:

Preferences of plant species by classes of livestock and uses by wildlife will vary from year to year and season to season. The table below is what might be expected under average climatic conditions and good management.

Forage Preferences

H = High
M = Medium
L = Low

Wildlife Preferred Uses

C = Cover
F = Food
N = Nesting

Plant Species	Animal Species			
	Cattle	Sheep	Deer	Pheasant
American licorice	H	H	F	F
big bluestem	H	H	C	C,N
blue grama	H	H	F	---
buckbrush	L	M	C	C,F
catclaw sensitivebriar	H	H	F	F
dotted gayfeather	M	M	---	---
eastern gamagrass	H	H	C,F	C,N
heath aster	M	H	F	C
Illinois bundleflower	H	H	F	C,F
indiangrass	H	H	C	C,N
leadplant	H	H	F	C,F
maximilian sunflower	H	H	F	C,F
prairie cordgrass	M 1/	L	C	C,N
prairie rose	M	L	C,F	C,F
sideoats grama	H	H	---	C
switchgrass	H 2/	L	C	C,F,N
western ragweed	H	M	F	C,F
western wheatgrass	H 1/	M 1/	F 1/	C,N

1/ Has a high preference during lush growth periods.

2/ Preferred during first half of growing season.

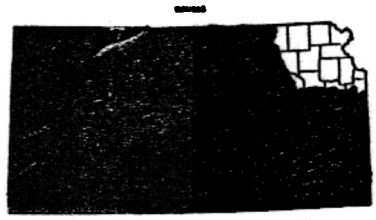
Reference:

Anderson, Kling L. and Clenton E. Owensby. 1969 Common Names of a Selected List of Plants. Kansas State University Tech. Bul. 117.

LOAMY LOWLAND

KANSAS RANGE SITE DESCRIPTION

1. Location of Site:



Land Resource Areas 106 and 107
Nebraska and Kansas Loess-Drift Hills
and Iowa and Missouri Deep Loess Hills

2. Climate:

See climate for LRA's 106 and 107
(Filed in the front of Section II-E)

3. Topography:

Nearly level lowlands that receive additional water from flooding and run-in from adjacent slopes.

4. Soils and Hydrological Characteristics:

a. These soils have silty or loamy surface layers and silty, loamy or clayey subsoils. They have a high water-holding capacity and readily absorb moisture. The soils are high in fertility. They range from well drained to poorly drained. The seasonal high water table ranges from 1 foot below the surface on the more poorly drained soils to depths greater than 5 feet on the well drained soils.

b. The major soils that characterize this site are:

Bremer	Haynie
Chase	Kennebec
Colo	Reading
Eudora	

c. Flooding is the major hazard on this site.

5. Climax Vegetation:

a. This range site is potentially a tall grass prairie. These areas are probably the ones referred to by pioneers who talked about grass tall enough to wrap around the saddle horn. Big bluestem, indiangrass, eastern gamagrass, prairie cordgrass, and switchgrass dominate this site. Hardwood trees usually cover the banks of streams bisecting this site. A fire induced climax prevented this site from being a hardwood forest.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

Grasses and Grasslike - 85 Percent			Forbs - 10 Percent		Trees and Shrubs - 5 Percent	
65	40	big bluestem		American licorice	5	black walnut
	15	eastern gamagrass		compassplant		buckbrush
	25	indiangrass		cup rosinweed		bur oak
15	10	prairie cordgrass	10	Illinois bundleflower		American elderberry
	10	switchgrass		Jerusalemartichoke		hackberry
5		Canada wildrye		maximilian sunflower		indigobush amorpha
		Florida paspalum		sawtooth sunflower		
		green muhly		wholeleaf rosinweed		
		knotroot bristlegrass				
		sedges		Atlantic wildindigo		
		tall dropseed		baldwin ironweed		
		Virginia wildrye		butterfly milkweed		
				dogbane		
			T	Louisiana sagewort		
				narrowleaf four-o'clock		
				prairie phlox		
				tall gayfeather		
				thickspike gayfeather		
				western ragweed		
				wingstem		

c. Common invaders to this site include barnyardgrass, common ragweed, giant foxtail, giant ragweed, Japanese brome, Kentucky bluegrass, lanceleaf ragweed, osageorange, prairie threeawn, redcedar, silver bluestem, and sumpweed.

6. Management Implications:

This site appears on stream terraces and flood plains and along stream channels. Much of this site and adjacent sites are cultivated, leaving narrow, sometimes isolated strips of grass and trees along the streams. The general size and location of the remaining grassland of the site lends itself to being managed as odd areas. This often results in the elimination of fire resulting in the site becoming dominated by tree species.

High preference forage species such as eastern gamagrass, Illinois bundleflower, and the rosinweeds are difficult to maintain on this site. With a combination of fire and intensive grazing management, these species may regain their position in the plant community.

Overgrazing with cattle results in the reduction of big bluestem, indiangrass, compassplant, and other preferred species. Switchgrass is reduced by overgrazing in the first half of the growing season. It responds as an increaser when grazing occurs during the last half of the growing season. Tall dropseed, buckbrush, baldwin ironweed, and western ragweed tend to increase with overgrazing.

Continued heavy use results in tall dropseed, western ragweed, undesirable woody species, and many less palatable plants becoming the dominant vegetation. Unless destructive grazing occurs, remnants of the major grass species tend to survive in a very reduced condition

Overgrazing with sheep results in the elimination of most forb species. The major grass species decline more slowly but will also be eliminated if overgrazing is continued. Tall dropseed, Japanese brome, sumpweed, and prairie threeawn are the major species left under these conditions.

This site is frequently used for winter grazing. When used for winter calving pastures, a complete growing season rest will allow the taller species to recover from excessive use and provide additional protection.

For season long or yearlong grazing, proper stocking and timely rest are essential to restore and maintain the potential vegetation. Planned grazing systems are very effective but must be well planned and managed to optimize forage and livestock production. Grazing and rest should be timed to permit the preferred plants to maintain themselves and the forage to be utilized before it becomes overly mature.

7. Wildlife Considerations:

When maintained in good to excellent condition, this site provides habitat for numerous wildlife species. The combination of tall grasses, forbs, trees, and the normally associated cropland provides food, nesting, and loafing cover as well as roost and escape cover for deer, turkey, quail, numerous songbirds, and small mammals.

Where excess litter buildup or dense underbrush occurs on this site, a properly timed spring burn can make the site more desirable for young birds and small mammals.

To maximize wildlife production, this site should be managed to maintain tall grasses and forbs. Maintaining shrubs and trees to provide escape cover and roosting habitat will further enhance potential wildlife numbers on this site.

8. Other Uses and Values:

The deep loamy soils of this site combined with the availability of water give this site the ability to produce significant amounts of hardwood timber. To maximize the multiple use benefit of this site, selective thinning, planting, or timber stand improvement must be planned and accomplished.

Outdoor recreation activities are common on this site due to the ability of the site to produce large shade trees. The hazard of flooding does limit many forms of recreational development. To optimize the recreation use, ungrazed areas used heavily by people must be frequently mowed or reduced to shorter understory vegetation.

9. Herbage Production Guidelines:

The following guidelines are based on available clipping data when this site is in excellent condition. Vigor of principal forage species, time of burning, if fire is used, as well as growing conditions, influence annual herbage production.

	Total Air Dry Herbage	
Growing Conditions	Pounds/Acre	Kilograms/Hectare
Favorable	7,000-9,000	7,600-9,800
Normal	6,000-7,000	6,700-7,600
Unfavorable	5,000-6,000	5,600-6,700

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's Per Hectare
Excellent	76-100	5-6	2.2	2-2.4	6.0
Good	51-75	6-9	1.6	2.4-3.6	4.0
Fair	26-50	9-15	1.1	3.6-6.0	2.7
Poor	0-25	15+	0.6	6+	1.5

These guidelines are considered safe initial stocking rates from which a sound management program can be built. Grazing only during the dormant season or use of a specialized grazing program will usually allow a substantial increase in the stocking rates shown.

When maintained in good to excellent condition, an average hay yield of 1.75 to 2.25 tons per acre can be expected from this site.

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Forage Preferences

H = High
M = Medium
L = Low

Wildlife Preferred Uses

C = Cover
F = Food
N = Nesting

Plant Species	Animal Species			
	Cattle	Sheep	Deer	Quail
American licorice	H	H	F	F
baldwin ironweed	L	M/L	---	C
big bluestem	H	M	C	C,N
buckbrush	L	M	C,F	C,F
bur oak	L	L	C,F	C,F
compassplant	H	H	F	C,F
cup rosinweed	H	H	F	C,F
eastern gamagrass	H	H	C,F	C,N
hackberry	L	M	C,F	C,F
Illinois bundleflower	H	H	F	F
indiangrass	H	M	C	C,N
knotroot bristlegrass	M	M	---	F
maximilian sunflower	H	H	C,F	C,F
prairie cordgrass	M 1/	L	C	C,N
switchgrass	H 2/	M	C	C,F,N
tall dropseed	M	L	C	C,N
western ragweed	M	M	---	C,F
wholeleaf rosinweed	H	H	F	F

1/ Has a high preference during lush growth periods.

2/ Preferred during first half of growing season.

Reference:

Anderson, Kling L. and Clenton E. Owensby. 1969 Common Names of a Selected List of Plants. Kansas State University Tech. Bul. 117.